

Pulmonary artery perforation due to off-label stent

Perforación de arteria pulmonar por stent fuera de indicación

Alejandro Rasines-Rodríguez,* César Abelleira Pardeiro, and Enrique José Balbacid Domingo

Servicio de Cardiología Infantil, Sección de Hemodinámica Infantil, Hospital Universitario La Paz, Madrid, Spain

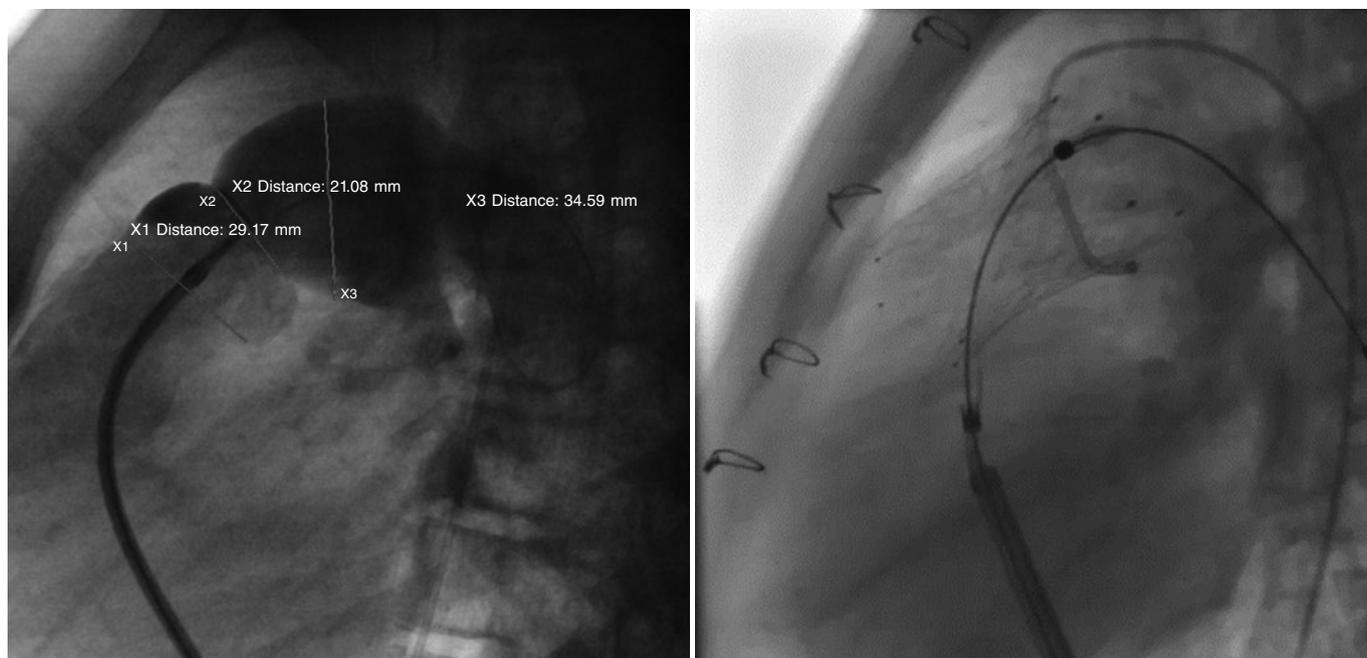


Figure 1.

This is the case of 13-year-old teenage girl diagnosed with pulmonary atresia with intact ventricular septum treated in the neonatal period with valvulotomy with radiofrequency and percutaneous pulmonary valvuloplasty. Since then, the patient has developed severe pulmonary regurgitation and moderate tricuspid regurgitation. Valve implantation into the right ventricular outflow tract (RVOT) is decided due to worsening functional class with restrictive behavior of the right ventricle (without anticipated dilatation), and hepatic congestion. Cardiac catheterization reveals the presence of a dilated and pulsatile (pulmonary annulus: 29 mm) RVOT with supravalvular stenosis (minimum diameter: 21 mm), and a 34 mm post-stenotic dilatation (figure 1). A second-staged stent is implanted for percutaneous valve implantation. Given the absence of specific material for RVOTs so dilated, a 30 mm x 40 mm self-expandable Sinus-XL stent (Optimed, Germany) (off-label) is selected for being long enough, easy to implant, having enough navigability for the patient's age (10-Fr sheath), and requiring less radial strength (favorable for dilated RVOTs).

A 14-Fr sheath was used to perform position angiographies (figure 1). A few hours later, the patient showed hemodynamic instability with transthoracic echocardiography findings compatible with cardiac tamponade. An emergency computed tomography scan (figure 2) confirmed the perforation of the pulmonary trunk at the operating room (figure 3; RA, right atrium; PA, pulmonary artery; RV, right ventricle). The stent was removed, and a pulmonary valve was implanted with favorable progression.

* Corresponding author.

E-mail address: alejandrorasines@gmail.com [A. Rasines-Rodríguez].

Received 12 April 2022. Accepted 6 June 2022. Online 8 July 2022.

2604-7322 / © 2022 Sociedad Española de Cardiología. Published by Permanyer Publications. This is an open access journal under the CC BY-NC-ND 4.0 license.

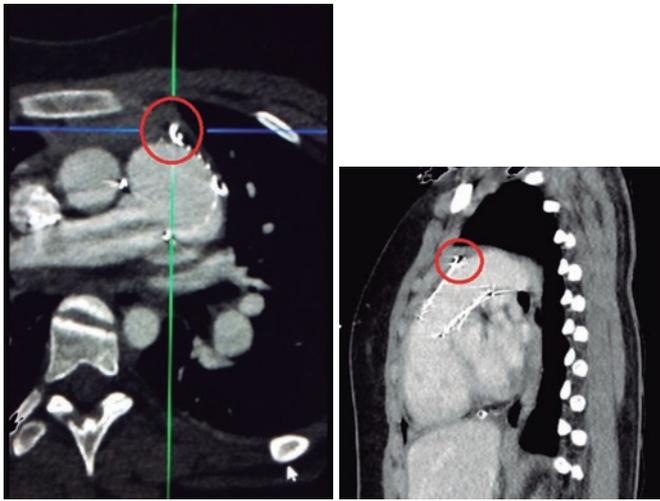


Figure 2.

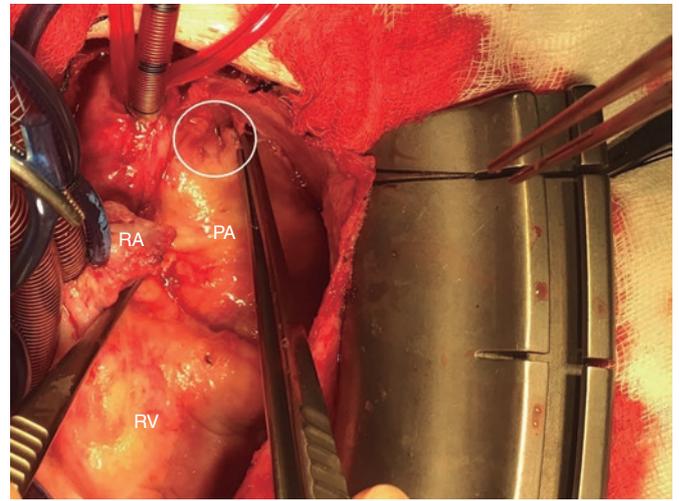


Figure 3.

The design of the stent is similar to that used during hybrid procedures in certain neonatal heart diseases, which means that similar complications can be expected.

The patient's parents' informed consent was obtained to be able to publish her case.

FUNDING

None whatsoever.

AUTHORS' CONTRIBUTIONS

A. Rasines Rodríguez: drafted the case. C. Abelleira Pardeiro: critical review and image selection. Direct patient care. E.J. Balbacid Domingo: critical review and image selection. Direct patient care. All authors: contributed to the study idea and design, data curation or its analysis and interpretation and final approval of the version that would eventually be published.

CONFLICTS OF INTEREST

None reported.